

June-12-12 8:49:03 AM

Page 1

Accept

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

12

12

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

D2573 Rev E

100

HAAS 1

HAAS CNC vertical machine #1

Memo

Program Batch No. 88609 Double check by: 11 1-Machine Step
No 1 per Folio FA051 and inspect per attached Dimension Sheets 2-Machine
Step No 2 per Folio FA051 and inspect per attached Dimension Sheets 3-
Machine Step No 3 per Folio FA051 and insp

110

Mill Cony

Conventional Milling Machine

Memo

Machine keyway as per dwg D2573 & D2574

120

QC

Quality Control

Memo

F. k 12/07/17 / A2 12/07/17

Dart Aerospace Ltd

W/O: 85609		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2573 PAR #: _____ Fault Category: Machining NCR: Yes No DQA: Date: 12/08/02
 Resolution: Scrap Disposition: Scrap QA: N/C Closed Date: 12/8/2

NCR: 12-1649		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/7/8	100	1 part scrap 2 edge bolts not tightened properly operator error	12/07/27 QSI042	Scrap + 10 place batch 85432	12/7/8	12/07/27	12/07/27 QSI042	12/07/27 DAS 16

NOTE: Date & initial all entries

Work Order ID 85609

85609

Page 2

June-12-12 8:49:03 AM

Item ID: D2573

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Saddle, Aft Out 205

Stop

NS2

Start Date: 12/06/2012 Start Qty: 12.00

12

Cust Item ID:

Required Date: 26/06/2012 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC8- Inspect parts - second check

0.00

DAS
14
2-89

12/07/27

12

12

130

QC

Memo

0.00

Quality Control

140

Chemical Conversion Coat per QSI005 4.1

0.00

140

HandFinish

Memo

0.00

Hand Finishing

12 12 12-7-30

150

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

150

Powdercoat

Memo

0.00

Powder Coating

START TIME:

FINISH TIME:

OVEN TEMPERATURE:

3200F

900

12X

12/07/31

m121841

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 85609

85609

Page 3

June-12-12 8:49:03 AM

Item ID: D2573

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Saddle, Aft Out 205

Stop ***NS2***

Start Date: 12/06/2012 Start Qty: 12.00

12

Cust Item ID:

Required Date: 26/06/2012 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC3- Inspect Part Finish

0.00

160

QC

Memo

0.00

Quality Control

12/6/12 12/07/31

170

Identify as per dwg & Stock Location: 5T442

0.00

170

Packaging

Memo

0.00

Packaging

12/7/31

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.00

Quality Control

12/7/31

MC512103/31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

June-12-12 8:49:06 AM

Page 1

Work Order ID: 85609

85609

Parent Item: D2573

D2573

Parent Item Name: Saddle, Aft Out 205

Start Date: 12/06/2012

Required Date: 26/06/2012

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP: 1 As Per RevE 06-01-27 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007		Manufactured	No			100	Each	17.0000	1	12			

D6101-007

Saddle Billet

**

PR 12.7.6

Location

Loc Qty

Loc Code

MAT041

16

83450

16

MAT042

1

79875

1

85432

12 13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	85609
Description: Saddle, Aft Outboard	Part Number:	D2573
Inspection Dwg: D2573 Rev. E		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2573 Rev. E and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
A	0.438	0.443		.438	.438	.438	.438		
B	1.745	1.755		1.750	1.748	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.750	1.750	1.750	1.750		
E	7.990	8.010		7.998	8.001	7.999	8.002		
F	0.490	0.510		.492	.502	.501	.504		
G	0.257	0.262		.258	.258	.258	.258		
H	0.375	0.380		.375	.378	.378	.378		
I	0.490	0.510		.503	.502	.503	.503		
J	1.174	1.184		1.179	1.178	1.178	1.180		
K	0.558	0.578		.560	.568	.567	.569		
L	1.174	1.184		1.179	1.180	1.178	1.179		
M	1.365	1.375		1.370	1.369	1.369	1.371		
N	2.495	2.505		2.500	2.501	2.498	2.500		
O	4.119	4.129		4.124	4.122	4.122	4.123		
P	0.115	0.135		.126	.127	.127	.127		
Q	0.115	0.135		.135	.140	.135	.135		
R	0.240	0.260		.250	.252	.250	.250		
S	0.115	0.135		.126	.125	.127	.122		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.230	3.229	3.228	3.230		
V	0.230	0.250		.242	.241	.239	.241		
W	0.115	0.135		.123	.125	.125	.124		
X	0.308	0.313		.310	.310	.310	.310		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.365	.363	.364	.366		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.625	.624	.624	.625		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.250	.250	.250	.245		
AE	1.500	1.520		1.515	1.516	1.516	1.515		
AF	0.115	0.135		.135	.127	.135	.135		
AG	0.240	0.280		.265	.265	.265	.265		
AH	0.240	0.260		.249	.249	.250	.249		
AI	2.000	2.020		2.002	2.002	2.003	2.003		
AJ	0.023	0.043		.037	.033	.033	.033		
Accept/Reject									

Measured by:	<i>[Signature]</i>
Date:	12/7/07 / 12/07/09

Audited by:	<i>[Signature]</i>
Date:	12-7-07 / 12/6/27

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.26	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	<i>[Signature]</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 25609
Description: Saddle, Aft Outboard	Part Number: D2573
Inspection Dwg: D2573 Rev. E	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2573 Rev. E and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	5 X	6 X	7 X	8 X	By	Date
A	0.438	0.443		.438	.438	.438	.438		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.750	1.750	1.750	1.750		
E	7.990	8.010		8.006	8.004	8.001	8.001		
F	0.490	0.510		.5035	.497	.504	.504		
G	0.257	0.262		.258	.258	.258	.258		
H	0.375	0.380		.378	.378	.378	.378		
I	0.490	0.510		.5015	.504	.5015	.504		
J	1.174	1.184		1.179	1.179	1.179	1.179		
K	0.558	0.578		.568	.568	.567	.568		
L	1.174	1.184		1.179	1.179	1.179	1.179		
M	1.365	1.375		1.370	1.370	1.371	1.371		
N	2.495	2.505		2.500	2.500	2.501	2.500		
O	4.119	4.129		4.122	4.123	4.123	4.124		
P	0.115	0.135		.127	.126	.127	.125		
Q	0.115	0.135		.135	.135	.135	.135		
R	0.240	0.260		.252	.251	.251	.251		
S	0.115	0.135		.122	.118	.123	.125		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.229	3.229	3.229	3.229		
V	0.230	0.250		.240	.241	.241	.242		
W	0.115	0.135		.126	.124	.126	.125		
X	0.308	0.313		.310	.310	.310	.310		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.365	.365	.364	.364		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.624	.624	.624	.624		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.246	.243	.250	.248		
AE	1.500	1.520		1.5135	1.513	1.514	1.513		
AF	0.115	0.135		.135	.135	.135	.135		
AG	0.240	0.280		.265	.265	.265	.265		
AH	0.240	0.260		.251	.250	.249	.249		
AI	2.000	2.020		2.003	2.002	2.004	2.003		
AJ	0.023	0.043		.033	.033	.033	.033		
Accept/Reject									

Measured by: <i>st</i>
Date: 12/07/10

Audited by: <i>SmB</i>
Date: 12/27/12

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.26	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	85609
Description: Saddle, Aft Outboard	Part Number:	D2573
Inspection Dwg: D2573 Rev. E		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2573 Rev. E and record below:

				Recorded Actual Dimensions				By	Date
Dim	Min	Max	Go/No Go Gauge	9	10	11	12		
A	0.438	0.443		.438	.438	.438	.438		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.750	1.750	1.750	1.750		
E	7.990	8.010		8.000	8.001	8.001	8.001		
F	0.490	0.510		.501	.501	.495	.499		
G	0.257	0.262		.258	.258	.258	.258		
H	0.375	0.380		.378	.378	.378	.378		
I	0.490	0.510		.505	.502	.502	.503		
J	1.174	1.184		1.179	1.179	1.179	1.179		
K	0.558	0.578		.570	.568	.568	.568		
L	1.174	1.184		1.179	1.179	1.179	1.179		
M	1.365	1.375		1.370	1.370	1.370	1.370		
N	2.495	2.505		2.500	2.500	2.500	2.500		
O	4.119	4.129		4.124	4.124	4.124	4.124		
P	0.115	0.135		.127	.128	.126	.127		
Q	0.115	0.135		.135	.135	.135	.135		
R	0.240	0.260		.251	.251	.256	.249		
S	0.115	0.135		.124	.127	.124	.127		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.230	3.230	3.230	3.230		
V	0.230	0.250		.240	.240	.240	.241		
W	0.115	0.135		.123	.127	.124	.128		
X	0.308	0.313		.309	.309	.309	.309		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.365	.365	.365	.365		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.6235	.625	.625	.625		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.246	.249	.243	.247		
AE	1.500	1.520		1.514	1.513	1.512	1.512		
AF	0.115	0.135		.135	.135	.135	.135		
AG	0.240	0.280		.265	.265	.265	.265		
AH	0.240	0.260		.248	.249	.248	.250		
AI	2.000	2.020		2.0044	2.0034	2.0088	2.0002		
AJ	0.023	0.043		.033	.033	.033	.033		

Accept/Reject

Measured by:	SA	FT
Date:	12/07/11	12/07/17

Audited by:	SMB	14
Date:	12/25	12/07/27

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.26	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 85609
Description: Saddle, Aft Outboard	Part Number: D2573
Inspection Dwg: D2573 Rev. E	Page 1 of 1

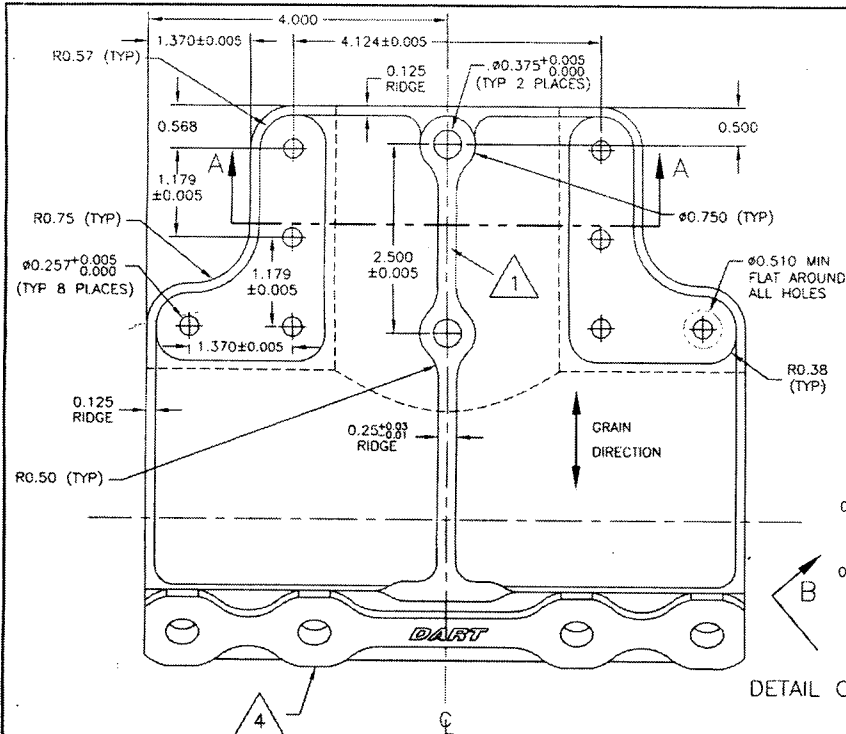
Inspect dimensions highlighted on inspection sheet drawing D2573 Rev. E and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	13	2	3	4	By	Date
A	0.438	0.443		.438					
B	1.745	1.755		1.750					
C	3.495	3.505		3.500					
D	1.745	1.755		1.750					
E	7.990	8.010		8.001					
F	0.490	0.510		.500					
G	0.257	0.262		.258					
H	0.375	0.380		.375					
I	0.490	0.510		.503					
J	1.174	1.184		1.179					
K	0.558	0.578		.568					
L	1.174	1.184		1.179					
M	1.365	1.375		1.370					
N	2.495	2.505		2.500					
O	4.119	4.129		4.124					
P	0.115	0.135		.127					
Q	0.115	0.135		.135					
R	0.240	0.260		.250					
S	0.115	0.135		.126					
T	0.178	0.198		.188					
U	3.210	3.250		3.230					
V	0.230	0.250		.243					
W	0.115	0.135		.125					
X	0.308	0.313		.309					
Y	0.760	0.765		.760					
Z	0.352	0.372		.365					
AA	0.470	0.530		.500					
AB	0.615	0.635		.625					
AC	0.053	0.073		.063					
AD	0.240	0.260		.250					
AE	1.500	1.520		1.512					
AF	0.115	0.135		.125					
AG	0.240	0.280		.265					
AH	0.240	0.260		.252					
AI	2.000	2.020		2.002					
AJ	0.023	0.043		.033					
Accept/Reject									

Measured by:	Ek
Date:	12/07/17

Audited by:	Smb
Date:	12-7-27 / 12-10-27

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.26	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	



NOTES

MATERIAL: 7075-T7351 (QQ-A-250/12)

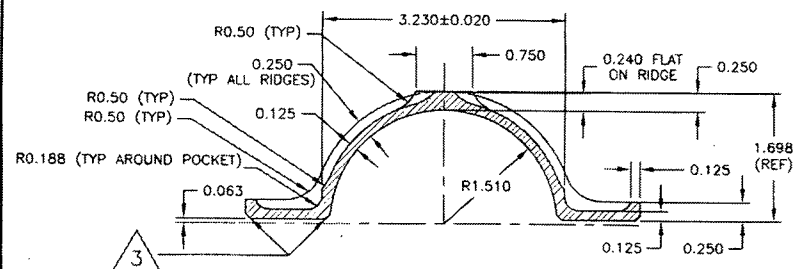
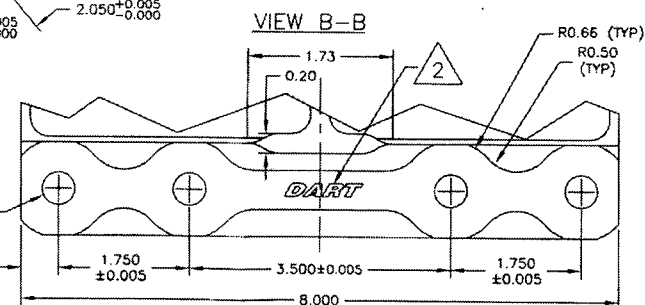
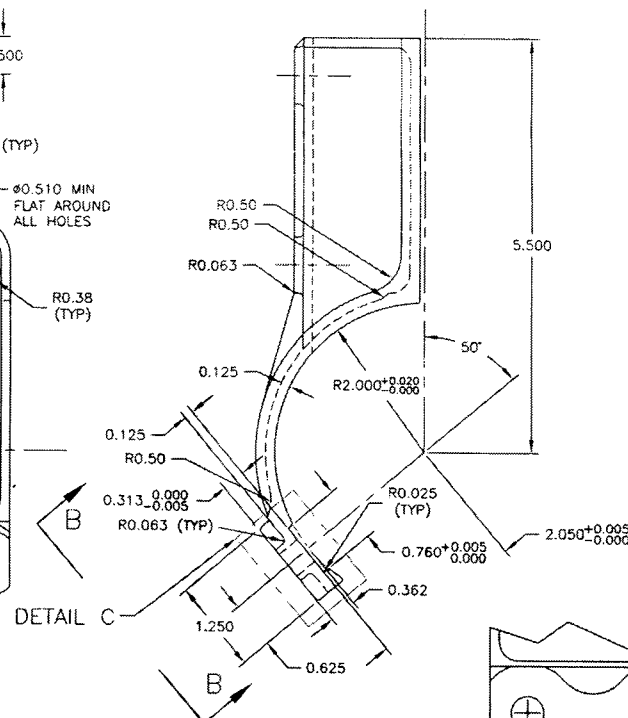
(REF DART SPEC. D6102-001)

FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER
DART QSI 005 4.3

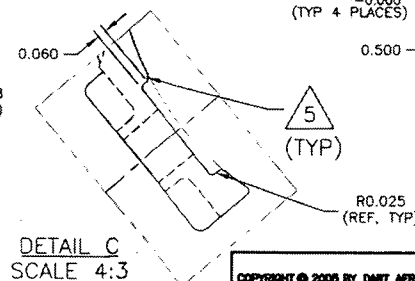
BREAK ALL SHARP EDGES 0.010 TO 0.020

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED




- 1 ENGRAVE PART AND BATCH NUMBER IN THIS AREA TO MAX DEPTH OF 0.010
- 2 ENGRAVE RAD LOGO TO MAX DEPTH OF 0.015 WITH MIN RAD 0.125
- 3 CHAMFER 0.063" x 45° AROUND THIS SURFACE (TYPICAL 2 PLACES)
- 4 CHAMFER 0.063" x 45° ALL AROUND
- 5 CHAMFER 0.033" x 45° (SEE DETAIL C)



SECTION A-A



DETAIL C
SCALE 4:3

E	05.07.13	ADD CHAMFER ON RIDGE NOTE 5
D	02.09.06	ADD RIDGES; TIGHTEN TOLERANCES
C	99.10.22	INCRP. DEO 9123/9079/9102 ADD DIMENSIONS PER TSR A1177
B	96.12.02	ADD GRAIN DIR., 0.438 WAS 0.425
A	96.09.16	NEW ISSUE
DESIGN		 DART AEROSPACE LTD. MARKHAM, ONTARIO, CANADA
DRAWN BY		
DS	PH	
CHECKED 	APPROVED 	DRAWING NO D2573
DATE 05.07.13	TITLE OUTER AFT SADDLE	
		REV. _____ SHEET 1 OF _____ SCALE _____

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12/06/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries